

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:				
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					Ship Self Defense/0604755N					
COST (\$ in Millions	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	129.872	114.514	52.163						CONT.	CONT.
SPS Improvement Program /20166	0.453	0.000	4.910						CONT.	CONT.
5" Rolling AirFrame Missile/20167	5.689	3.734	0.000						CONT.	CONT.
NATO SeaSparrow/ 20173	13.111	9.497	0.000						CONT.	CONT.
QRCC / K2178/K2794*	26.927	45.985	44.538						CONT.	CONT.
NULKA/K2441	4.339	3.168	0.000						CONT.	CONT.
AIEWS / K2309/K2792/K2793	51.839	43.619	0.000						CONT.	CONT.
IRST/22649	11.475	8.511	2.715						CONT.	CONT.
Volume Search Radar/32735	16.039	0.000	0.000						0.000	16.085
Quantity of RDT&E Articles										
* Includes replan funding for FY02-04 (pending approval of ATR in process)										
A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Ship Self Defense (SSD). The consolidation facilitates effective planning and management of these efforts, exploiting the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection, point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds, from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection; parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets; and improvements in terminal gun system effectiveness and in missile kinematics, control and homing accuracy are required for a successful hardkill engagement.										

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		JUNE 2001
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	Ship Self Defense/0604755N	
<p>These SSD projects address and coordinate the detect, control, and engage functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering through FY 2001. After FY 2001, this PE will contain those efforts related to Detect and Control Activities.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Multi-sensor integration is being addressed through the efforts of Quick Reaction Combat Capability (QRCC) (K2178), while sensor improvements are addressed through the SPS Improvements (20166), Infrared Search and Track (K2442), Shipboard Electronic Warfare Improvements (K0954) and Advanced Integrated Electronic Warfare System (K2309) projects. These improvements to both active and passive detection capabilities are complementary to the ship signature reduction technology also being pursued through Shipboard EW (K0954).</p> <p>(U) CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated response to the ASCM threat are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (K2178) efforts. In addition, that project provides for the central system engineering management of SSD developments, including efforts required to integrate SSDS with the Advanced Combat Direction System (CDS) for those ships having a CDS.</p> <p>(U) ENGAGEMENT: Through FY 2001, this PE addresses both missile and terminal gun system improvements necessary to meet their requirements are being addressed via NATO Seasparrow Missile System (NSSMS) (20173) and 5" Rolling Airframe Missile (RAM) (20167). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fuzing/warhead capabilities. Gun system improvements address system detection, rate-of-fire, number of rounds on target, first round accuracy, and reliability and maintenance. The offboard Active Decoy (NULKA, K2190) is a joint cooperative program between the United States and Australia to develop and engage an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. The Decoy is designed to counter a wide variety of present and future radar guided Anti-Ship Missile (ASM) threats by radiating a large radar cross section signal while flying trajectory. From FY 2002 this function will transfer to PE 0604756N for RAM and NSSMS and 0604575N for AIEWS, and NULKA</p>		

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RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5		Ship Self Defense/0604755N																									
<p>B. Program Change Summary:</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget Submit:</td> <td>130.470</td> <td>85.050</td> <td>60.008</td> </tr> <tr> <td>Appropriated Value:</td> <td>130.480</td> <td>87.149</td> <td></td> </tr> <tr> <td>Adjustments to FY2000/2001 Appropriated Value</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY2001 President's Budget:</td> <td>-0.320</td> <td>27.365</td> <td>-7.845</td> </tr> <tr> <td>FY 2002 President's Budget:</td> <td>130.160</td> <td>114.514</td> <td>52.163</td> </tr> </tbody> </table> <p>Funding:</p> <p>FY00: Congressional reduction for section 8055 (-\$0.464) and minor pricing adjustments (\$0.144).</p> <p>FY01: Change due to QRCC SSDS RDTEN Restructure (+\$28.164) and congressional reductions (-\$0.799)</p> <p>FY 02: Changes include transition of Proj 20167 (RAM) and Proj 20173 (NATO Seasparrow) to PE 0604756N (-15.156), transition of Prok. K2190 (NULKA) and Proj. K2309 (AIEWS) to PE 0604757N (-25.535), SPS Improvement Program's AN/SPQ-9B adjustments (+4.910), increase to QRCC SSDED REDTEN Restructure (+27.967), minor price adjustments (-0.031)</p> <p>Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget Submit:	130.470	85.050	60.008	Appropriated Value:	130.480	87.149		Adjustments to FY2000/2001 Appropriated Value				FY2001 President's Budget:	-0.320	27.365	-7.845	FY 2002 President's Budget:	130.160	114.514	52.163
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.453	0.000	4.910						Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: This program develops and tests performance and reliability upgrades for search radar equipment to meet the evolving threat.</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS: - (U) (\$0.453) Completed Developmental/Operational Testing and made any necessary corrections to support the FY01 Milestone III production decision.</p> <p>2. (U) FY 2002 PLAN: - (U) (\$2.000) Begin AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1. - (U) (\$2.000) Complete FOT&E using Lightweight Antenna configuration on a CEC/SSDS platform. - (U) (\$0.910) Begin full integration of the AN/SPQ-9B with the MK 160 Gun Computer System.</p>										

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166																									
<p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY2001</u></th><th><u>FY2002</u></th><th><u>FY 2003</u></th><th><u>FY 2004</u></th><th><u>FY 2005</u></th><th><u>FY2006</u></th><th><u>FY2007</u></th><th><u>To Complete</u> CONT.</th><th><u>Total Cost</u> CONT.</th></tr></thead><tbody><tr><td>OPN LINE 511000 (AN/SPQ-9B)</td><td>6.753</td><td>4.372</td><td>17.926</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. Acquisition Strategy: AN/SPQ-9B Radar is a directed sole source contract to Northrop Grumman Norden Systems for LRIP, and upon successful completion of TECHEVAL/OPEVAL in FY01, entering into Full Rate Production.</p> <p>D. Schedule Profile: See attached.</p>										<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u> CONT.	<u>Total Cost</u> CONT.	OPN LINE 511000 (AN/SPQ-9B)	6.753	4.372	17.926							
	<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u> CONT.	<u>Total Cost</u> CONT.																				
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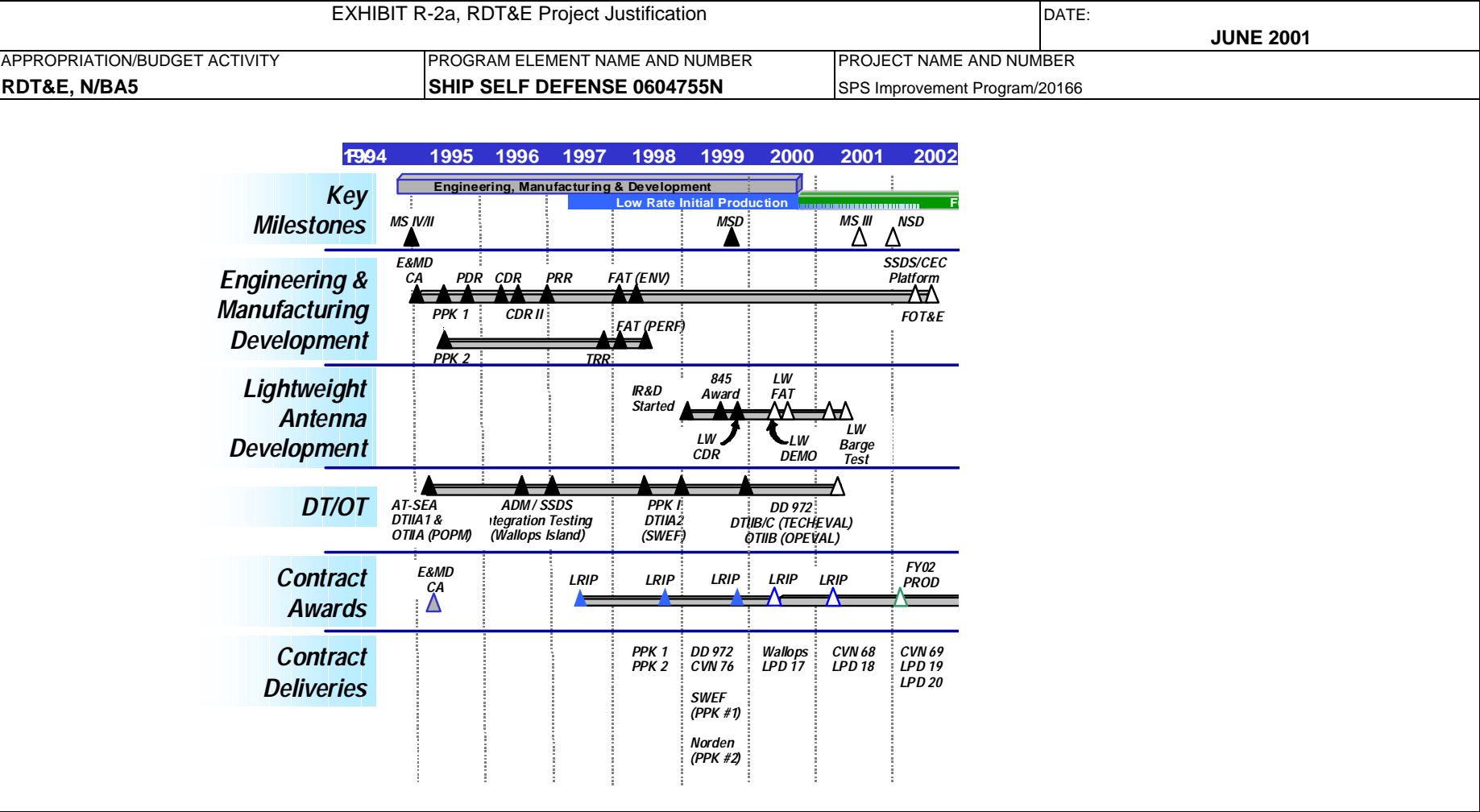
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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	NGNS, Melville, NY	37.440	0.304	09/00	0.000	N/A	4.910	12/00	6.012	48.666	48.666
Primary Hardware Development	FFP	*ITT/G, Van Nuys, CA	7.000	0.000	10/98	0.000	N/A	0.000	N/A	0.000	7.000	7.000
Subtotal Product Development			44.440	0.304		0.000		4.910		6.012	55.666	55.666
Remarks: *Development cost of AN/SPS-48 Transmitter.												
Development Support Equipment												
Software Development	WR	PHD NSWC, CA	5.960	0.025	10/99	0.000	N/A	0.000	N/A	0.000	5.985	5.985
Training Development		Various	2.112								2.112	2.112
Integrated Logistics Support	WR	Various	2.092	0.020	10/99	0.000	N/A	0.000	N/A	0.000	2.112	2.112
Configuration Management	PD/WR	Various	6.550	0.030	10/99	0.000	N/A	0.000	N/A	0.000	6.580	6.580
Technical Data	WR	Various	3.155	0.015	10/99	0.000	N/A	0.000	N/A	0.000	3.170	3.170
Subtotal Support			19.869	0.090		0.000		0.000		0.000	19.959	19.959
Remarks: Various Activities includes PHD NSWC, NRL, NSWC/CD, and APL												

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Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E	WR/RC	PHD NSWC, CA	1.665	0.000		0.000		0.000		0.000	1.665	1.665
DT&E	WR	NRL, Washington, DC	1.233	0.000		0.000		0.000		N/A	1.233	1.233
OT&E	WR/RC	PHD NSWC, CA	0.560	0.000		0.000		0.000		N/A	0.560	0.560
OT&E	WR	NRL, Washington, DC	0.410	0.000		0.000		0.000		N/A	0.410	0.410
Subtotal T&E			3.868	0.000		0.000		0.000		0.000	3.868	3.868
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	2.395	0.059	11/99	0.000	01/00	0.000		0.000	2.454	2.454
Subtotal Management			2.395	0.059		0.000		0.000		0.000	2.454	2.454
Remarks:												
Total Cost			70.572	0.453		0.000		4.910		6.012	81.947	81.947
Remarks:												

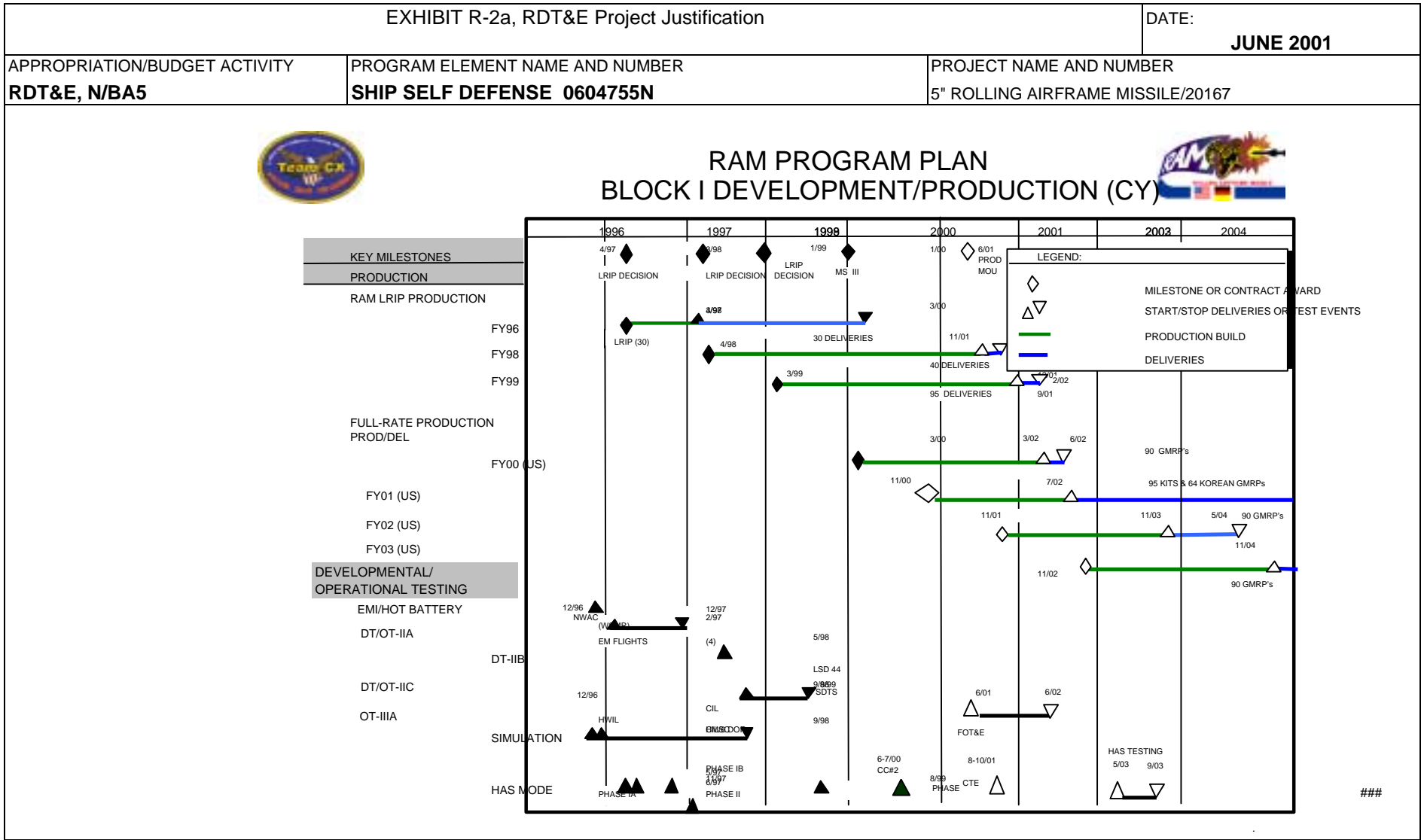
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N				5" ROLLING AIRFRAME MISSILE/20167					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	5.689	3.734							Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio frequency/Infared 5" Ram Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuze.</p> <p>The RAM Block 1/Helo Air Surface (HAS) upgrade program is a joint requirement of the US and Germany agreed to in a Memorandum of Understanding (MOU) signed by both parties. This effort will provide an additional capability against helicopters, aircraft and surface craft. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence. SSDS/HAS Integration and Testing will continue through FY 2007.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$4.621) Refined HAS Missile Algorithms, commenced SSDS Integration, and continued Simulation Efforts and Engineering Tests. - (U) (\$.577) Tested TAS OCP upgrade. - (U) (\$.491) Corrected OPEVAL deficiencies. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.227) SSDS/HAS Software Development. - (U) (\$.476) SSDS/HAS Interface and Integration. - (U) (\$.977) Conduct Block 1 OT-III A FOT&E. - (U) (\$.054) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 PLAN:</p> <p style="padding-left: 20px;">This Project moves to PE 0604756N in FY 2002</p>										

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N						PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167																																			
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	<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	To <u>Complete</u>	Total <u>Cost</u>																																
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Exhibit R-2a, RDT&E Project Justification

Exhibit R-3 Cost Analysis (page 1)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5				PROGRAM ELEMENT SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware/Softwr Developmt	SS/CPFF	Raytheon Co., Tucson, AZ	59.088	0.000		0.364	11/00				CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	JHU/APL, Laurel, MD	5.538	0.536	11/99	0.150	11/00			CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	Raytheon Co, San Diego, CA	0.000	1.728	03/00	0.492	11/00			CONT.	CONT.	CONT.
HAS Support	SS/CPFF	JHU/APL, Laurel, MD	0.000	0.000		0.000				CONT.	CONT.	CONT.
Miscellaneous	Various	Various	228.978	0.261	11/99	1.673	11/00			CONT.	CONT.	CONT.
Subtotal Product Development			293.604	2.525		2.679				CONT.	CONT.	CONT.
Remarks: Primary Hardware Development transitions into Test & Evaluation.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												

Exhibit R-3 Cost Analysis (page 2)										DATE: JUNE 2001		
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DT&E/OT&E/FOT&E	SS/CPAF	Raytheon Co., Tucson, AZ	6.626	1.116	04/00	0.700	11/00			CONT.	CONT.	CONT.
DT&E/OT&E		China Lake, CA/PHD, CA	7.685	0.940	11/99	0.000				CONT.	CONT.	N/A
FOT&E		China Lake, CA/PHD, CA	0.000	0.000		0.250	11/00			CONT.	CONT.	N/A
Miscellaneous		Various	5.003	1.034	11/99	0.027	11/00			CONT.	CONT.	CONT.
Subtotal T&E			19.314	3.090		0.977				CONT.	CONT.	CONT.
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	3.142	0.074	02/00	0.078	11/00			CONT.	CONT.	CONT.
Subtotal Management			3.142	0.074		0.078				CONT.	CONT.	CONT.
Remarks:												
Total Cost			316.06	5.689		3.734		4.808		Continuing	Continuing	CONT.
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER NATO SEASPARROW/20173					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	13.111	9.497							CONT	CONT
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: This project encompasses two (2) primary efforts to enhance ship self defense:

- (U) EVOLVED SEASPARROW MISSILE (ESSM):** A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability.
- (U) NATO SEASPARROW- MK 91 Rearchitecture/SDSMS** The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements.

Note: This Project moves to PE 0604756N in FY 2002.

R-1 SHOPPING LIST - Item No. 137 - 14 of 38

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER NATO SEASPARROW/20173
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) (U) FY 2000 ACCOMPLISHMENTS (U) <i>ESSM</i>: (U) (\$9.444) Continued EMD efforts at Raytheon, including S-Band capability for AEGIS/ESSM uplink. Prepare for DT-IIC/OT-IIC on the SDTS. Conducted ESSM DT-IIA at WSMR. (U) (\$2.583) MK 41 QuadPack. Conducted formal testing including: Weapons control system/VLS integration with AEGIS at WSMR and LCS RegressionTest. (U) <i>NATO SEASPARROW</i> : (U) (\$1.084): Completed development of the computer program suite for the NSSMS MK 57 Mod 6 (ReArchitecture) for LHDs with AN/SWY-3. Entered CSIT for LHD 7 at ICSTF with the MK 57 Mod 6. Corrected all high priority computer program deficiencies identified as a result of LHD 7 ICSTF testing. Supported initial work up for ESSM DT-IIC/OT-IIC on SDTS.</p> <p>2. (U) FY 2001 PLAN: (U) <i>ESSM</i>: (U) (\$7.509) Continue AEGIS S Band development. Complete DT-IIC/OT-IIC, international cooperative firings. Complete DT-IIB/OT-IIB at WSMR. Upgrade configuration of EMD missile assets to support TECHEVAL/OPEVAL on AEGIS ships. (U) (\$1.022) MK 41 QuadPack. Complete development/testing of VLS integration (U) <i>NATO SEASPARROW</i>: (U) (\$1.966) Complete development of computer program suite for the NSSMS MK 57 Mod 7 for CVN 68 with SSDS MK 2 Mod 0. Conduct integration testing of MK 57 Mod 7 with SSDS Mk 2 Mod 0 at Wallops Island. Address any deficiencies identified as a result of CSIT testing at ICSTF, integration testing at Wallops Island.</p> <p>3. (U) FY 2002 PLAN Project moves to PE 0604756N in FY 2002</p>		

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																																																											
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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			SHIP SELF DEFENSE 0604755N			NATO SEASPARROW/20173						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	HUGHES/RAYTHEON	120.687	7.049	10/99	2.561	10/00				130.297	130.297
		TDW	3.746								3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	43.985	1.857	10/99	0.482	11/00				46.324	46.324
Systems Engineering	VARIOUS	VARIOUS	21.263	0.400	10/99		10/00				21.663	NA
NATO-Primary Hdwe Dev		HUGHES/RAYTHEON	29.098	0.503	10/99	1.358	11/00			CONT	CONT	
Software Development		TRACOR	2.346							CONT	CONT	
Systems Engineering		VARIOUS	4.385	0.471	10/99	0.450	10/00			CONT	CONT	
Subtotal Product Development			225.510	10.280		4.851				CONT	CONT	CONT
Remarks:												
ESSM												
Integrated Logistics Support	WR	NSWC PHD	2.818	0.250	10/99		10/00				3.068	
Engr Support	WR	VARIOUS	2.923	0.060	10/99	0.100	10/00				3.083	
NATO-MK 91/SDSMS												
ENGR SUPPORT	WR	VARIOUS	5.091	0.060	10/99	0.187	10/00			CONT	CONT	
Subtotal Support			10.832	0.370		0.287				CONT	CONT	
Remarks:												
Remarks:												

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Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 1)								DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						JUNE 2001	
RDT&E, N BA-5			SHIP SELF DEFENSE 0604755N			NATO SEASPARROW/20173							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	WR	NAWC CL/PT Mugu	2.421			0.600	10/00				CONT		
SDTS/DT OT IIC	WR	NAWC WS	3.732	0.916	10/99	2.200	10/00				6.000		
OPEVAL/TECHEVAL	WR	VARIOUS (CORONA,APL, Dahlgren,NSWC PHD	1.050	0.300	10/99	0.421	10/00				CONT		
Subtotal T&E			7.203	1.216		3.221							
Remarks:													
ESSM-ENGR SPT	VARIOUS	VARIOUS	4.046	0.061	10/99	0.116	10/00				CONT		
ESSM-PM SPT	VARIOUS	VARIOUS	0.471	0.027	10/99						0.498		
ESSM-LABOR	PD/WR		2.567	0.782	VARIOUS	0.782	VARIOUS				CONT		
ESSM - TRAVEL	PD/WR		0.860	0.180	VARIOUS	0.185	VARIOUS				CONT		
ESSM- MISC	VARIOUS	VARIOUS	1.880	0.145	VARIOUS	0.005	VARIOUS				CONT		
NATO TRAVEL/MISC	VARIOUS	VARIOUS	1.333	0.050	VARIOUS	0.050	VARIOUS				CONT		
Subtotal Management			11.157	1.245		1.138							
Remarks:													
Total Cost			254.702	13.111		9.497				CONT	CONT		
Remarks: The Firings of the ESSM aboard the Self Defense Test Ship in FY 02 are critical for the qualification and acceptance testing in a shipboard enviroment. The TECHEVAL /OPEVAL will provide the first guided intercept from a AEGIS Platform to Test Out the Weapon System and obtain Milestone III for the ESSM Full Rate Production.													

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Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	26.927	45.985	44.538						0.000	360.696
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification</p> <p>The Quick Reaction Combat Capability (QRCC) project implements an evolutionary acquisition of improved ship self defense capabilities against Anti-Ship Cruise Missiles (ASCMs) for selected ships. The Ship Self Defense System (SSDS) is the integrating element of QRCC. The design integrates several existing stand-alone Anti-Air Warfare systems that do not individually provide the complete detection, control, and engagement capabilities needed against low flying, high speed ASCMs with low radar cross sections. The SSDS integration concept fulfills the need for an automated detection, quick reaction and multi-target engagement capability emphasizing performance in the littoral environment. SSDS replaces manual control of several self-defense systems with a single integrated capability under the computer-aided control of ship operators. System design emphasizes use of non-developmental items, commercial standards, Next Generation Computer Resources, computer program reuse and open architecture. SSDS is a physically distributed, open architecture computer network consisting of commercially available or previously developed hardware. It includes a command table that uses components of the Navy's AN/UYQ-70 standard display for human-machine interface, commercially available local area network access units and circuit cards, and commercially available fiberoptic cabling.</p> <p>SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A electronic countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile and Phalanx Close-In Weapon System and is being installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to to integrate with ACDS and CEC on CV(N), LPD-17, LHD and LHA ship classes.</p> <p>SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 consists of leveraging critical experiments and re-use of technology and software. SSDS MK2 is in development and will integrate other ship self defense elements, such as the AN/SPQ-9B radar, and NATO Sea-sparrow missile system with the Cooperative Engagement Capability (CEC) to improve joint interoperability. SSDS MK2 provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both ownship and remote data in support of the AAW Capstone Requirements. SSDS MK2 will also incorporate selected features of the Advanced Combat Direction System to become the integrated, coherent real time Command and Control System for Aircraft Carriers and Amphibious ships. It will: increase operational capabilities; improve combat readiness and Battle Group Interoperability; and promote standardization. It will also introduce new shipboard tactical displays and support equipment, as well as, implement interfaces common with those used by AEGIS to facilitate transition to Common Command and Decision.</p> <p>* The FY 2001 amount includes a pending Above Threshold Reprogramming action for \$28.164M.</p>										

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 Accomplishments:

- (U) (\$14.159) Continued computer program coding and began SSDS MK 2 Mod 1/2 unit testing and multi-element integration testing.
- (U) (\$ 3.723) Activated Ship System Engineering Center (SSEC) Wallops Island on SSDS MK2 corrections on activation / test equipment requirements.
- (U) (\$.513) Prepared Integrated Logistics Support (ILS) planning and documentation updates for SSDS MK2.
- (U) (\$.500) Developed System Segment Specification (SSS) and Performance and Compatibility Requirements (P&CR) for LHD ship class.
- (U) (\$ 8.032) Continued development integration and testing of SSDS MK2 Mod 0 for CVN 68, USS NIMITZ, deployment.

3. FY 2001 Plan:

- (U) (\$30.263) Continue SSDS MK 2 Mod 1/2 computer program coding, unit testing and multi-element integration testing. (\$15.800 of ATR)
- (U) (\$5.126) Conduct developmental testing as SSEC Wallops Island and modify software as required. (\$5,126 of ATR)
- (U) (\$3.000) Complete development integration and begin test of SSDS MK 2 Mod 0 efforts and deliver to CVN 68, USS NIMITZ.
- (U) (\$.614) Continue documentation updates, training curriculum updates and ILS planning. (\$.614 of ATR)
- (U) (\$1.616) Begin systems engineering for LHD unique integration efforts with SSDS MK 2. (\$1.616 of ATR)
- (U) (\$5.000) Apply Labor Rate Adjustment on the development, integration and delivery Raytheon contract. (\$5.000 of ATR)
- (U) (\$0.366) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

4. FY 2002 Plan:

- (U) (\$25.838) Complete computer program coding, unit testing and multi-element integration testing.
- (U) (\$ 2.000) Begin computer program development for unique LHD integration efforts.
- (U) (\$ 5.000) Post test analysis and computer program correction
- (U) (\$ 5.000) DT/DEP testing at SSEC Wallops Island
- (U) (\$ 5.700) Apply remaining Labor Rate Adjustment on the development, integration and delivery Raytheon contract.
- (U) (\$ 1.000) Complete Developmental Test and Operational Test on SSDS MK 2 Mod 0 configuration.

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Exhibit R-2a, RDT&E Project Justification

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	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	<u>To Complete</u>	<u>Total Cost</u>																																												
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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

JUNE 2001

APPROPRIATION/BUDGET ACTIVITY

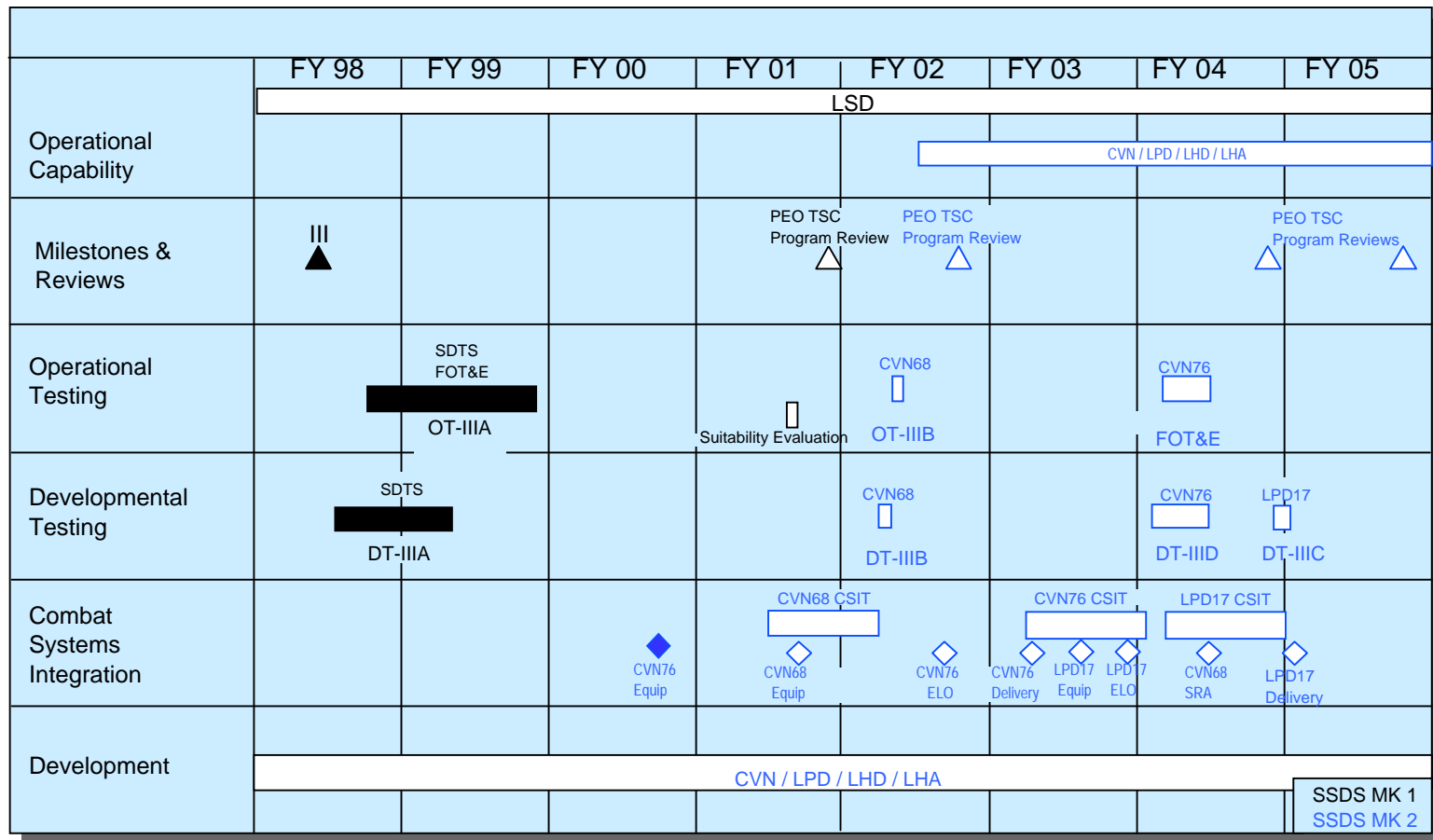
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA5**SHIP SELF DEFENSE 0604755N**

Quick Reaction Combat Capability / K2178

D. Schedule Profile:



R-1 SHOPPING LIST - Item No. 137 - 22 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE:				
JUNE 2001												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
QRCC / K2178	WR	NSWC/DD-Dahlgren, VA	14.326	0.797	11/99	0.000	10/00	0.892	10/01	0.000	16.015	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	22.727	2.299	01/00	0.000	11/00	0.950	11/01	0.000	25.976	N/A
Systems Engineering	WR	NSWC/PHD-Pt Hueneme, CA	5.311	1.184	11/99	0.000	N/A	0.500	N/A	0.000	6.995	N/A
Product Development	SS/CPAF	RSC(5108)-San Diego, CA	7.637	13.567	06/00	36.297	10/00	26.879	10/01	37.966	122.346	122.346
Systems Engineering	SS/CPAF	RSC(5466)- San Diego, CA	20.353	0.000	10/99	0.000	N/A	0.000	N/A	0.000	20.353	20.353
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	0.950	1.841	09/00	3.970	3/01&9/01	4.167	3/01&9/01	5.610	16.538	N/A
Award Fees	SS/CPAF	RSC(5466)- San Diego, CA	2.163	0.000	10/99	0.000	N/A	0.000	N/A	0.000	2.163	N/A
Risk Reduction / EMD	Various	Various	76.366	0.000	N/A	0.000	N/A	0.000	N/A	0.000	76.366	76.366
Subtotal Product Development			149.833	19.688		40.267		33.388		43.576	286.752	219.065
Remarks: Risk reduction and Engineering Manufacturing Development was done primarily by Hughes. FY 01 includes ATR in the amount of \$25.446. RSC contract N00024-99-C-5108 modification for development re-plan is in process.												
QA / RMA												
Systems Engineering	WR	NWAS Corona	8.045	0.246	11/99	0.100	10/00	0.200	10/01	0.600	9.191	
Subtotal Support			8.045	0.246		0.100		0.200		0.600	9.191	
Remarks: FY 01 includes ATR in the amount of \$.100.												

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Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 2)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
QRCC / K2178	WR	NSWC/PHD-Pt Hueneme CA	19.840	2.197	11/99	1.996	10/00	4.250	10/01	0.000	28.283	N/A
Developmental Test & Evaluation	WR	NSWC DD, Wallops Island	8.779	3.723	11/99	2.050	10/00	5.000	N/A	6.000	25.552	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	0.618	0.000	11/99	0.482	10/00	0.500	N/A	0.000	1.600	N/A
Developmental Test & Evaluation	WR	OPTEVFOR	0.533	0.149	11/99	0.150	10/00	0.250	10/01	0.000	1.082	N/A
Subtotal T&E			29.770	6.069		4.678		10.000		6.000	56.517	N/A
Remarks: FY 01 includes ATR in the amount of \$1.678.												
Program Management support												
Program Management support			4.752	0.924	N/A	0.940	N/A	0.950	N/A	0.670	8.236	N/A
Subtotal Management			4.752	0.924		0.940		0.950		0.670	8.236	N/A
Remarks: FY 01 includes ATR in the amount of \$.940. Program management support includes travel and support services.												
Total Cost			192.400	26.927	N/A	45.985	N/A	44.538	N/A	50.846	360.696	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 24 of 137 - 38

Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER NULKA DECOY/K2190/K2441					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	4.339	3.168							CONTINUING	CONTINUING
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification
The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles (ASM) by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility (EMC) with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- (U) FY 2000 Accomplishments:
 - (U) (\$4.339) Completed update of system software that programs the aerodynamic response of the NULKA decoy to specific threats when launched from specific ship classes (based on OPEVAL results); conducted at sea testing of the NULKA system in the SPY-1 AEGIS radar environment aboard a cruiser; developed a technical requirements specification for a dual band, spatially distributed IR decoy; and continued AIEWS integration.
- (U) FY 2001 Plan:
 - (U) (\$3.122) Complete AIEWS integration. Prepare detailed specification for an infra-red (IR) material payload and dispensing mechanism.
 - (U) (\$0.046) Portion of extramural programs reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
- (U) FY 2002 Plan:
 - This project moves to PE 0604757N in FY 2002

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																							
APPROPRIATION/BUDGET ACTIVITY RDTE, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441																								
<p>B. (U) Program Change Summary: (OPN Line 553000)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">To Complete</th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Anti-Ship Missile Decoy System</td> <td style="text-align: center;">32.101</td> <td style="text-align: center;">37.765</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. (U) Acquisition Strategy: N/A</p> <p>D. (U) Schedule Profile: See Attached.</p>									FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	Anti-Ship Missile Decoy System	32.101	37.765							CONT.	CONT.
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																			
Anti-Ship Missile Decoy System	32.101	37.765							CONT.	CONT.																			

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Exhibit R-2a, RDT&E Project Justification

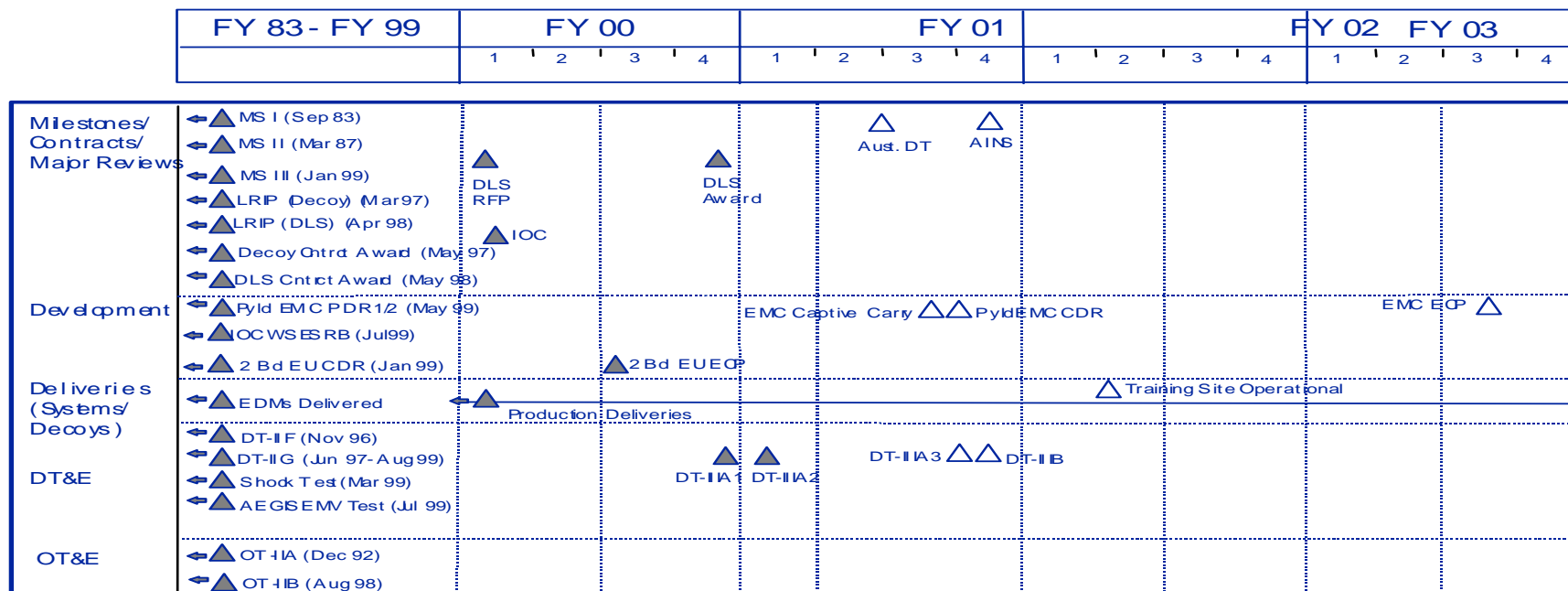
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441

OVERALL NULKA/MK 53 DLS SCHEDULE



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Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			NULKA Decoy/K2190/K2441						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	WR	NSWC Crane, IN	2.250	0.588	03/00	0.417	10/00			CONT.	CONT.	N/A
	WR	NSWC Indian Head, MD	2.047								2.047	N/A
	WR	NSWC Dahlgren, VA	4.723	0.756	03/00	0.439	10/00			CONT.	CONT.	N/A
	WR	NSWC Port Hueneme, CA	0.908								0.908	N/A
	WR	NRL Washington, DC	2.673	1.050	03/00	0.400					4.123	N/A
	SS/CPFF	Sippican Boston, MA	3.592								3.592	3.592
	SS/CPFF	BAeA, Australia	5.440	0.513	03/00						5.953	5.953
	SS/CPFF	TBD	0.000			1.493						
	PD	NAVSUP Washington, DC	2.400								2.400	2.400
Subtotal Product Development			24.033	2.907		2.749				CONT.	CONT.	CONT.
Remarks:												
Support and Management	CC/CPFF	Anteon Arlington, VA	0.806	0.195	03/00	0.219	10/00			CONT.	CONT.	
	MIPR	GRCI	0.000	0.042	03/00							
Travel	Various	Various	1.750	0.120	03/00	0.123	10/00			CONT.	CONT.	
Miscellaneous	Various	Various		0.144	03/00	0.077	10/00			CONT.	CONT.	
Subtotal Support and Management			2.556	0.501		0.419				CONT.	CONT.	
Remarks:												
Test & Evaluation	WR	OPTEVFOR	0.150	0.106	04/00						0.256	
	WR	NSWC Pt. Mugu, CA.	0.567								0.567	
	WR	NRL Washington, DC		0.825	03/00						0.825	
Subtotal T&E			0.717	0.931							1.648	
Total Cost			27.306	4.339		3.168		0.000		CONT.	CONT.	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Self Defense / 0604755N				Advanced Integrated Electronic Warfare System (AIEWS)/K2309					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	51.839	43.619							Cont.	Cont.
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes EDMs to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY00 ACCOMPLISHMENTS:

- (U) (\$38.887) Continued AIEWS Increment 1 EMD prime contract; continue/complete incremental CDR; Lab/Field Activity support included.
- (U) (\$9.752) Continued CAPS software development.
- (U) (\$0.850) Continued development of Increment 1 logistics efforts.
- (U) (\$0.900) Continued EW Roadmap Study.
- (U) (\$0.450) Commenced planning and demonstration test and evaluation efforts to support engineering, development and operational testing.
- (U) (\$1.000) Planned combat systems integration efforts including SSDS/GCCS(M) and LAMPS/SH-60.

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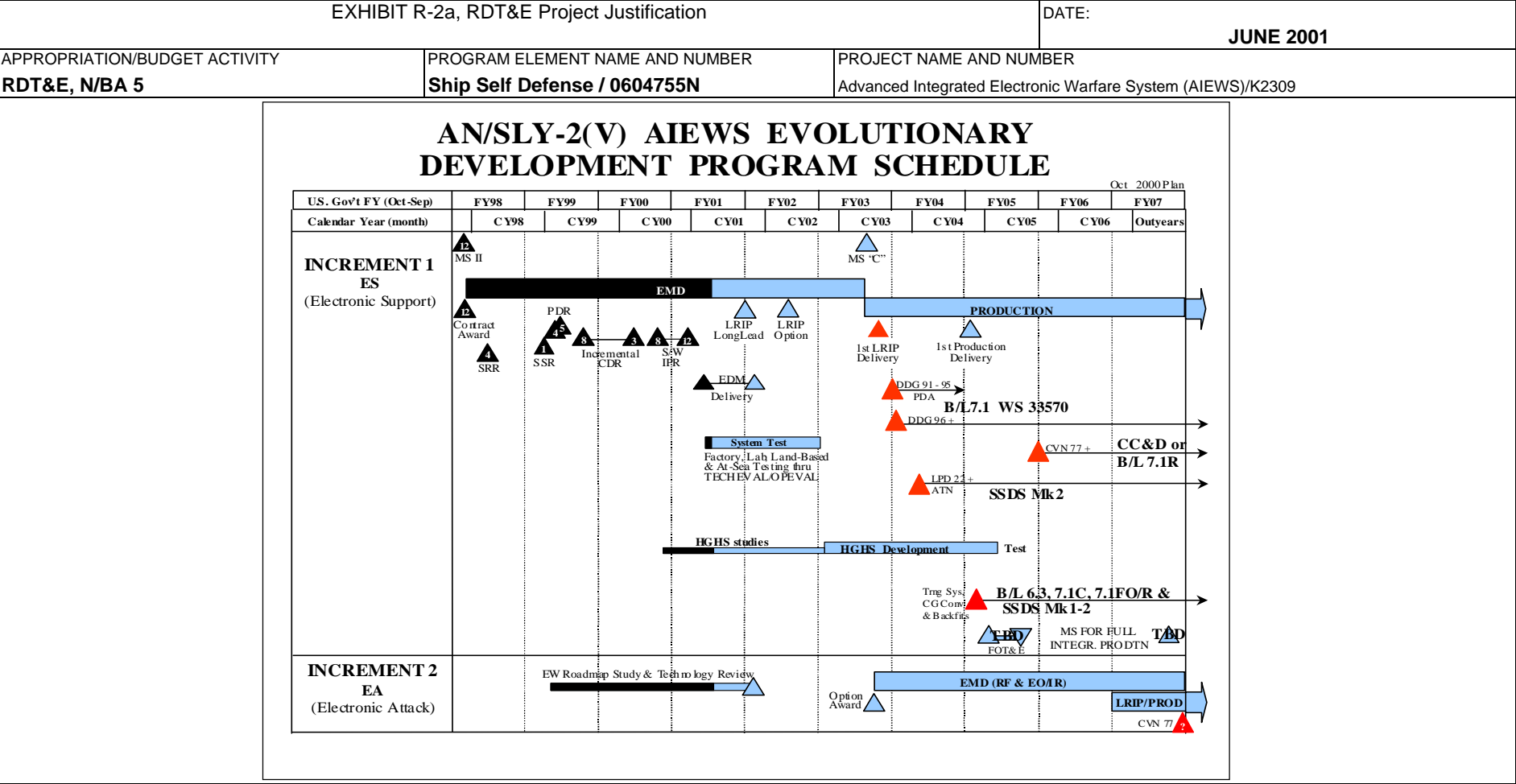
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001																																						
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																																								
RDT&E, N/BA 5		Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																								
<p>U) FY01 PLAN:</p> <ul style="list-style-type: none">- (U) (\$33.085) Continue AIEWS Increment 1 EMD prime contract; Build EDMs; Lab/Field Activity support included.- (U) (\$8.173) Continue CAPS software development.- (U) (\$0.615) Continue development of Increment 1 logistics efforts.- (U) (\$1.746) Continue test and evaluation efforts to support engineering, development and operational testing.- (U) (\$0) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>(U) FY02 PLAN:</p> <p>This project moves to PE 0604757N in FY 2002</p> <p>B. (U) Other program Funding Summary</p> <table border="1"><thead><tr><th></th><th>FY2000</th><th>FY2001</th><th>FY2002</th><th>FY2003</th><th>FY2004</th><th>FY2005</th><th>FY2006</th><th>FY2007</th><th>To Complete</th><th>Total Cost</th><th></th></tr></thead><tbody><tr><td>OPN 231300</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td>CONT</td><td>CONT</td></tr><tr><td>AIEWS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures Options for full contractor support</p>											FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost		OPN 231300	0	0	0							CONT	CONT	AIEWS											
	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																																			
OPN 231300	0	0	0							CONT	CONT																																		
AIEWS																																													

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Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPAF	LMIS Syracuse NY	36.369	30.088	12/99	27.082	11/00			9.461	125.960	93.383
HGHS Development	TBD	TBD	-	-	-	-	-			TBD	TBD	TBD
Software Development	C/CPAF	DSR Fairfax VA	15.261	8.216	12/99	6.804	11/00			1.573	35.454	31.655
Systems Engineering	WR/RCP	NSWCDD	2.913	2.157	10/99	1.194	10/00			CONT	CONT	
Combat Sys Modification/Integration	Various	Various	1.114	1.000	03/00	-	11/00			CONT	CONT	
Miscellaneous	Various	Various	3.044	3.579	10/99	2.762	10/00			CONT	CONT	
Q-70 Procurement	FFP	LM/Eagan	0.686	0.210	03/00	0.520	03/01			0.000	1.416	N/A
Award Fees	C/CPAF	LM & DSR	1.371	1.852	08/00	1.369	04/01			1.829	7.592	N/A
Subtotal Product Development			60.758	47.102		39.731				CONT	CONT	
Remarks: Total cost for Increment 1 hardware development includes basic EMD contract EAC plus options in progress.												
Specialty Engineering												
Integrated Logistics Support												
Training												
Technical Engineering Services	WR/RCP	NRL	1.978	1.831	10/99	0.751	10/00			CONT	CONT	
Miscellaneous	Various	Various	2.545	2.140	10/99	1.043	10/00			CONT	CONT	
Subtotal Support			4.523	3.971		1.794				CONT	CONT	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test Planning/T&E Events	WR/RCP	NSWCDD	0.200	0.200	10/99	0.575	10/00			CONT	CONT	
Miscellaneous	Various	Various	0.280	0.250	10/99	1.171	10/00			CONT	CONT	
Test Events (Aircraft Services	Various	Various	-	-	-	-	-					
Subtotal T&E			0.480	0.450		1.746				CONT	CONT	
Remarks:												
Program Management Support	Various	Various	0.715	0.150	10/99	0.185	10/00			CONT	CONT	
Travel				0.166		0.163						
Subtotal Management			0.715	0.316		0.348				CONT	CONT	
Remarks:												
Total Cost			66.476	51.839		43.619				CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 33 of 137 - 38

Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Self Defense / 0604755N				Infrared Search and Track (IRST) 22649					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	11.475	8.511	2.715							70.783
RDT&E Articles Qty										

A. (U) This project provides funding for the Infrared Search & Track (IRST) System. The threat from Sea Skimming Anti-Ship Cruise Missiles (ASCMs) is increasing at a substantial rate and is impacting the Navy's force protection and battle space dominance capability. The IRST program bolsters ships force protection capabilities by providing fully integrated passive detection/declaration of Sea Skimming ASCM threats. Because IRST operates in the infrared portion of the electromagnetic spectrum, it is immune to radar countermeasures and is not affected by atmospheric anomalies such as surface based ducting. In addition, IRST provides extremely accurate and precise elevation data at the horizon that allows immediate determination of hostile intent. IRST can also free up search radar resources by providing horizon search coverage where radar performance is marginal. The IRST provides passive augmentation to complement radar, electronic support measures and visual surveillance systems for air targets. IRST will identify those air targets to the ships' combat system.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 PLAN:

- (U) (\$0.933) Continued IRST system engineering (algorithm & simulation).
- (U) (\$0.099) Conducted contract engineering services.
- (U) (\$4.446) Continued detector design and fabrication.
- (U) (\$1.501) Continued Stabilized Platform Subsystem (SPS) design, fabrication, integration, and acceptance test.
- (U) (\$1.387) Continued signal processor (SPCU) design modification's and fabrication.
- (U) (\$1.280) Continued software modifications.
- (U) (\$0.747) Continued integrated logistics, reliability, maintainability, and training support.
- (U) (\$0.850) Independent Systems Engineering.
- (U) (\$0.232) Program Management/Technical Support.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604755N	PROJECT NAME AND NUMBER Infrared Search and Track (IRST) 22649
<p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none">- (U) (\$1.256) Continue systems engineering; begin systems integration and testing.- (U) (\$1,810) Complete detector design and fabrication; conduct integration test.- (U) (\$1.068) Complete SPS design, fabrication, integration, and acceptance test.- (U) (\$1.319) Complete SPCU design modications and fabrication.- (U) (\$980) Continue software modifications.- (U) (\$690) Continue integrated logistics, reliability, maintainability, and training support.- (U)(\$919) Independent Systems Engineering.- (U) (\$270) Program Management/Technical Support.(U)(\$199) Portion of extramural program reserved for Small Business Innovation Research assessment law 15 USC 638. <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$862) Complete systems engineering; and begin systems integration and test.- (U) (\$670) Complete software modifications.- (U) (\$470) Complete integrated logistics, reliability, maintainability, and training support.- (U) (\$588) Independent Systems Engineering.- (U) (\$125) Program Management/Technical Support. <p>B. Other Program Funding Summary: Not Applicable</p> <p>C. Acquisition Strategy: Not Applicable</p> <p>D. Schedule Profile: See attached.</p>		

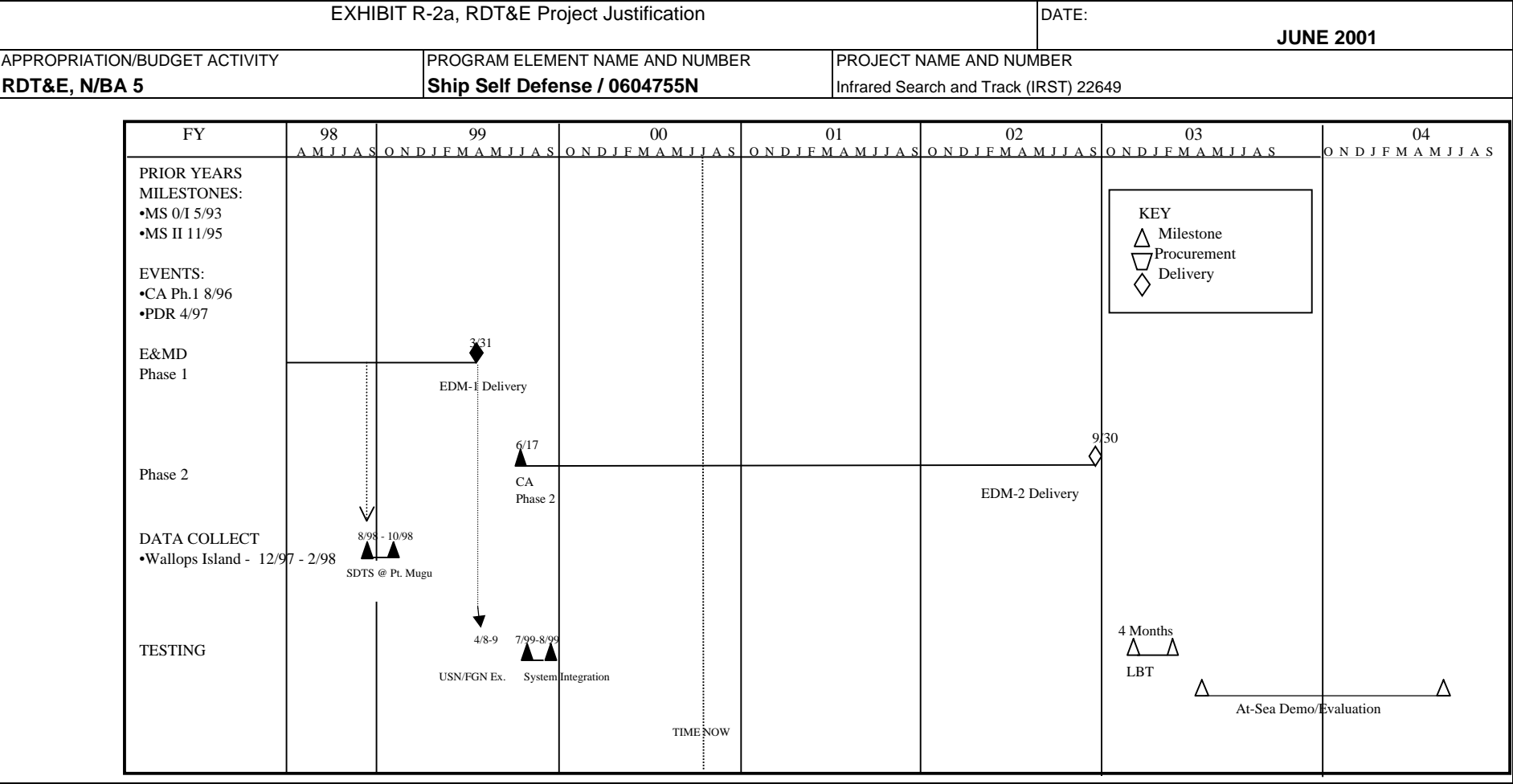
R-1 SHOPPING LIST - Item No. 137 - 35 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RD&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware (Detector)	C/CPAF	LOCKHEED MARTIN	29.630	4.446	01/00	1.810	11/00			0.000	35.886	
Ancillary Hardware Development												
Systems Engineering (SE&SI&T)	C/CPAF	LOCKHEED MARTIN		0.933		1.256		0.862		Continuing	Continuing	
Contract Engineering Services		LOCKHEED MARTIN		0.099						1.000	1.099	
Tooling												
SPS	C/CPAF	LOCKHEED MARTIN		1.501		1.068		0.000		0.000	2.569	
Award Fees												
SPCU		LOCKHEED MARTIN	4.686	1.387	01/00	1.319				2.300	9.692	
Subtotal Product Development			34.316	8.366		5.453		0.862		Continuing	Continuing	
Remarks:												
Development Support Equipment												
Software Development		Various	1.080	1.280	Various	0.980	Various	0.670	Various	Continuing	Continuing	
Training Development												
Integrated Logistics Support				0.747		0.690		0.470		Continuing	Continuing	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			1.080	2.027		1.670		1.140		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 37 of 137 - 38

Exhibit R-3, Project Cost Analysis**UNCLASSIFIED**

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Exhibit R-3 Cost Analysis (page 2)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		NSWC/Lockheed Martin Joint Exercise	2.300				11/00			0.000	2.300	
Operational Test & Evaluation		NSWC/Lockheed Martin, Integration Testing	0.875				11/00			0.000	0.875	
Independent Systems Engineering GFE		NSWC/Dahlgren		0.850		0.919		0.588		Continuing	Continuing	
Subtotal T&E			3.175	0.850		0.919		0.588		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management/Tech Support	Various	Various	2.182	0.200	01/00	0.230	11/00	0.100		Continuing	Continuing	
Travel			0.055	0.032		0.040		0.025		Continuing	Continuing	
SBIR						0.199					0.199	
Overhead												
Subtotal Management			2.237	0.232		0.469		0.125		Continuing	Continuing	
Remarks:												
Total Cost			40.808	11.475		8.511		2.715		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 38 of 137 - 38

Exhibit R-3, Project Cost Analysis**UNCLASSIFIED**